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CS 385: Applied Database Management Systems
6-2-16

2.8

(a) $\pi_{branch\_name}(\sigma_{branch\_city=Chicago}(branch))$

(b) $\pi_{custome\_name}(\sigma_{branch\_name=Downtown}(borrower \bowtie loan))$

2.9

(a) branch: branch_name
customer: customer_name (this is not a very good primary key)
loan: loan_number
borrower: loan_number
account: account_number
depositor: account_number

(b) branch_name shows up in loan, customer_name shows up in borrower and depositor,loan_number shows up in borrower, and account_number shows up in both account and depositor.

2.12

(a) $\pi_{person\_name}(\sigma_{company\_name=First\ Bank\ Corporation}(works))$

(b) $\pi_{person\_name,\ city}(\sigma_{company\_name=First\ Bank\ Corporation}(works \bowtie employee))$

(c) $\pi_{person\_name,\ city,\ street}(\sigma_{company\_name=First\ Bank\ Corporation\ and\ salary>10{,}000}(works \bowtie employee))$

2.13

(a) $\pi_{loan\_number}(\sigma_{amount>10{,}000}(loan))$

(b) $\pi_{customer\_name}(\sigma_{balance>6{,}000}(depositor \bowtie account))$

(c) $\pi_{customer\_name}(\sigma_{balance>6{,}000 \ and \ branch\_name=Uptown}(depositor \bowtie account))$